

Cover Story

ControlPlex[®] Board with SVS201-CP
Optimally prepared for Industry 4.0

Including Ethernet I/P interface
ControlPlex[®] Board with SVS16-EN

E-T-A automotive circuit breakers
in customer applications all over the world



**From vision
to reality**

E-T-A Director
Dr. Clifford Sell on
Industry 4.0





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ControlPlex® Board with SVS16-EN
Including Ethernet I/P interface



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ControlPlex® Board with SVS201-CP
Optimally prepared for Industry 4.0



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FAQ – Frequently Asked Questions
All you ever wanted to know about
E-T-A products



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Typically Chinese
»Chinese Hot Pot«

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Front page:

ControlPlex® System with power distribution board SVS201-PWR, electronic circuit protector ESX50D-S and PROFINET-Bus Controller CPC10PN-T4

Impressum

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Networking is an ever-growing phenomenon in modern society. Meanwhile the comprehensive availability of data has also become standard procedure in the industry and in production. The direction is getting clearer and clearer, the vision becomes tangible.



them. Possible system failures and defects of individual components can then quickly be identified. This will again lead to a significant increase of the process and planning safety and thus of the entire production capacity.

The **ControlPlex**[®] design is so versatile and flexible that it optimally matches the systems to be monitored. Tailor-made components help to meet the requirements you may have in your plant in the future. And they do it now. E-T-A is your fast and reliable partner when it comes to protection and power distribution. If you want to think ahead, please do not hesitate to contact us. We look forward to the dialogue with you!

Yours



Dr. Clifford Sell

Executive Committee
E-T-A Elektrotechnische Apparate GmbH

The advantages of devices being able to communicate with each other in the production process are obvious. However, such a process requires specific components, sensors and actuators. They have to meet the necessary requirements and to offer the corresponding interfaces for communication. We at E-T-A have intensively been working on this topic for quite some time. The **ControlPlex**[®] system helps us to provide a clear reply to questions regarding protection and monitoring in DC 24 V applications.

Industry 4.0 From vision to reality

System availability is in the centre of our considerations. It requires monitoring the various parts of the system. Monitoring allows to collect data and to evaluate

At a glance - the features of ControlPlex® Board SVS16-EN

- Integral DC 24 V complete system for overcurrent protection, power distribution
- Remote control and failure indication via Ethernet/IP interface
- For electronic circuit protectors
ESX10-115/-125 up to 10 A (fixed ratings)
ESX10-S115/-S125 1A-10 A (adjustable)
- For solid state remote power controllers for activation and monitoring of magnetic valves E-1048-S7xx up to 5A
- Can be extended for customized power distribution concepts
- Further product versions available for Profibus-DP, Profinet, Modbus-TCP and EtherCAT

ControlPlex®Board with SVS16-EN

Including Ethernet I/P interface

Field bus and industrial Ethernet systems are widely used in modern machine and plant construction today. Besides a consistent communication from the lowest field level to the top control level, diagnostic capabilities are of the essence. And of course this kind of technology helps to save many, many cable lengths by using standardized bus cables.

Flying into the world wide web with Ethernet I/P

ControlPlex® Board with SVS16-EN (fig. 1) does not only offer selective overcurrent protection and power distribution in load circuits, but also functions such as switching, protecting and diagnostics. Your direct line to the world wide web via Ethernet I/P.

Communication is run via an Ethernet I/P bus connector. The suitable RJ45 plugs are already placed on the base board. An integral 2-port-switch enables the module to support real-time-communication in both line and ring topologies. Assignment of the IP addresses is via BCD rotary switch or directly via the network. The integral Ethernet I/P module offers the possibility to read out data via an integral web server and display them on websites. Access to these sites is via an internet browser and by using the IP address of the device.

Always the right overcurrent protection on board

The power distribution system SVS16-EN-16 does not only hold all terminals for line entry and load distribution, but also 16 slots for electronic circuit protectors such as type ESX10-S125 (with reset input) or the ESX10-S115 (with control input).



Fig. 1: The **ControlPlex®** Board with SVS16-EN offers optimised power distribution and an integral communication via Ethernet I/P with dual port interface

The plug-in device (fig. 2) with adjustable ratings from 1 A to 10 A offers selective overcurrent protection for all loads in the area of the DC 24 V control voltage.

No matter whether it's PLCs, Fieldbus or Ethernet modules, valve clusters or operator panel - the ESX10-S makes load protection child's play thanks to a single trip curve for all types of loads. The integral current limitation ensures that only the defective current path is switched off in the event of an overload or short circuit and the line is reliably protected. At the same time the current limitation dependably prevents the DC 24 V voltage of the switch-mode power supply to dip and avoids long downtimes due to lengthy trouble-shooting.

One system for all applications

The integral Ethernet I/P module transmits all error modes of the 16 circuits to the PLC via the RJ45 connectors in the SVS16-EN. Via the same PROFIBUS cable, it is possible to remotely reset or switch ON/OFF the ESX10-S after a

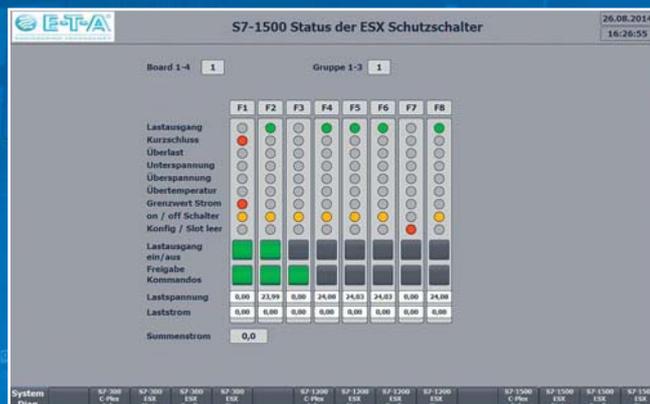


Fig. 2: The electronic DC 24 V circuit protector ESX10-S with adjustable current ratings from 1 A to 10 A limits the overcurrent.

disconnection on grounds of overcurrent. For I/O wiring of the SVS16-EN-16 only the Ethernet cable has to be connected instead of at least 34 individual cables for signalling and activation. This helps to reduce wiring costs and saves additional I/O sub-assemblies while at the same time enhancing diagnostic functions. **This is how to enjoy automation!**

At a glance - the features of *ControlPlex*® Board SVS201-CP

- Intelligent power distribution system
- Genuine "plug & play" and "hot swap" included
- Memory with oscilloscope function to support trouble-shooting
- Software allowing clear and consistent hard configuration during planning, start-up or maintenance



Visualisation of *ControlPlex*® software „At a glance“

Diagnostic capability, remote serviceability and energy management of the entire control and field level are the decisive aspects in factory automation today. Our intelligent DC 24 V power distribution systems with a consistent connection to industrial communication platforms offer all these possibilities.

Overcurrent protection and power distribution "on board"

The **ControlPlex®** system consists of the power board type SVS201-PWR with max. 40 A rated current for 8 to 24 slots, accommodating the electronic circuit protector type ESX50D-S and a communication module type CPC10 for the various fieldbus and Ethernet derivatives. By means of the communication module CPC10PN-T4, the system can be extended to four strings with a total of 96 slots by cascading the distribution boards. The electronic circuit protectors type ESX50D-S are fitted with an integral current limitation and a unique trip curve for all types of loads. This ensures a stable DC 24 V control voltage without voltage dips in the event of short circuit or overload. The current rating can be adjusted either via the software or with an „offline“ rating adjustment directly on the device by means of a selector switch from 1 A to 10 A - a perfect solution for all logisticians, because a single unit offers it all.

Always at full throttle: the ELBus®

A lot of information is transferred directly via the drive bus ELBus® to the integral application CPU of the CPC bus controller, including the status indication per load circuit, overload or short circuit conditions and all kinds of measuring data for DC 24 V system voltage, load current and load voltage. The cycle time is only 730 ms for up to 96 circuit protectors - this is inimitably fast. All measuring values and status information is then forwarded to the superordinate control unit via PROFINET or PROFIBUS-DP.

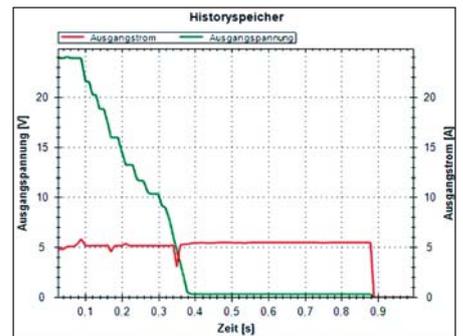
Raise energy efficiency, cut costs

Efficient energy management of machines

ControlPlex® Board with SVS201-CP

Optimally prepared for Industry 4.0

and equipment requires a purposeful disconnection of unused loads and system parts. Vital criteria include remote controllability of the individual DC 24 V load circuits and the adjustment of a switch-on delay and disconnection sequences via software. An overload of the power supply is avoided, because reconnection of the DC 24 V loads is effected with current limitation. The notorious problem "component is destroyed by ON operation" will vanish as the ESX50D-S will very softly load the input capacitors of the DC 24 V loads with constant current.

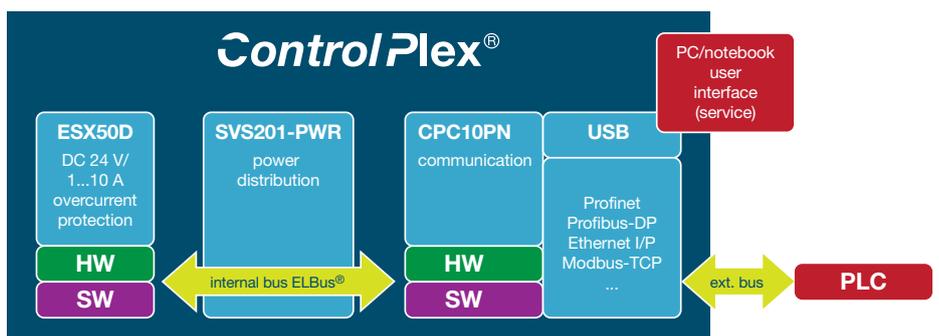


Creeping short circuit in the load circuit

Condition Monitoring - a stitch in time saves nine

A continuous analysis of load currents and load voltage is now also possible on the DC 24V level. This can in future be purposefully used for the energy consumption behaviour of machinery and equipment. This is mainly relevant with

regard to the introduction of an energy management system in accordance with ISO 50001 and a continuous data logging: **Perfectly fitted for Industry 4.0.**



Schematic diagram **ControlPlex®**

PowerPlex® – service and support

As individual as our customers' requirements



Hannes Büttner,
Application Specialist
at E-T-A

CAN bus systems are an ongoing trend in the design of special vehicles and watercraft. For many years E-T-A has been offering such a system: the E-T-A **PowerPlex®**. Current talked to Hannes Büttner, **PowerPlex®** Application Specialist at E-T-A, about

service and support possibilities offered for **PowerPlex®** customers.



PowerPlex® Ready allows remote access via the internet and ensures prompt support and assistance.

Current: **PowerPlex®** was launched in 2007 and has meanwhile become established globally in a wide range of applications. Which customers benefit from the service and support possibilities?

Hannes Büttner: Quite simply all of them. Of course the services supplied vary from case to case because each customer decides for himself which services he wishes to make use of. This may range from initial questions regarding system design to support regarding start-up and the complete preparation of a configuration. We offer the entire range.

Current: What do customers expect who make use of your services?

Hannes Büttner: Most of them wish to benefit from a quick and comprehensive support and from our long-standing experience. This is particularly true for new and big projects, but not exclusively.

Current: Remote maintenance seems to be a topical subject. What is E-T-A's response?

Hannes Büttner: With the **PowerPlex®** Ready we offer a tool for remote maintenance which enables us to offer support globally. It allows us or even the

OEM to access the installed **PowerPlex®** system without having to be directly on site. A computer with the installed **PowerPlex®** configuration software and **PowerPlex®** Ready, connected with the **PowerPlex®** system, are sufficient. Remote access is then implemented via a protected internet connection.

Current: Does this have time-saving benefits for the customers?

Hannes Büttner: We attend to several major customer projects in the marine industry from our headquarters in Altdorf. This helps to save time and costs, because the requirements of our customers regarding **PowerPlex®** are as different as our customers themselves. Applications range from luxury sailing yachts in Finland to sportfishing yachts in America. Concerning these two projects, we established the entire system configuration and the layouts of the user surfaces. Access is enabled via a touch screen integrated in the touch PC and **PowerPlex®** Ready.

Current: Do your customers have any concerns regarding system safety when you are able to log onto their systems?

Hannes Büttner: No, because we offer them complete transparency in our work. The customer can view in real time what we are doing on his computer. In addition system access is only possible when the customer has started **PowerPlex®** Ready. And he is able to interrupt this connection at any time. Our customers highly appreciate this uncomplicated support.

Current: Thank you for your time.



More information?
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Sunao Otha



Sunao Ohta joined our subsidiary in Japan in early 2014. Sunao will manage our Japanese customers from a range of business fields, both directly and indirectly via a distribution network.

Sunao graduated as an Engineer from the Institute of Technology, Chiba, Japan. His career experience with Omron Group has allowed him to develop a well based position in the market. He has established a comprehensive network of distributors and partners throughout his career and his experience and industry knowledge will help him to support our customers in this important market and continue to develop customized protection and power distribution solutions with our Japanese customers, who expect to receive superior quality solutions from E-T-A.

Jürgen Fritz



In January 2015 Jürgen Fritz will assume the newly created position of Business Development Manager for Mechanical Engineering, being responsible for one of the most important industries for E-T-A.

Jürgen Fritz started working for E-T-A in 2006 and has up to now been responsible for the E-T-A sales office in Heilbronn.

In future he will tend to prospective customers in machine and plant construction in the whole of Germany. It is his goal to develop tailor-made solutions in the DC 24 V area in cooperation with German machine manufacturers for their plants. Electronic circuit protectors and power distribution systems are among E-T-A's core competences and help the customers in this industry to significantly reduce downtimes.

Timm Decker



At the beginning of 2015 Timm Decker will assume the newly created position of Regional Sales Manager for Northern Germany. He will be responsible for the E-T-A sales offices in Hamburg, Hanover, Cologne, Chemnitz and Datteln. In addition to his new role he will continue to actively work as a Sales Engineer in his previous territory.

Timm began working for E-T-A in July 2010, after completing his education as an Electronics Engineer. Prior to coming to E-T-A Timm worked as a Technician in power plant technology, he then changed to Wilo AG, located in Dortmund, where he collected a lot of professional experience on the score of project management. At the same time he pursued additional studies to become a certified electrical engineer; focusing on energy technology and process automation and lastly, he worked for Endress + Hauser as a Sales Engineer for five years.

It is Timm's goal to offer the best possible service and advice to the customers in his sales territory with regard to the E-T-A product range. Together with his five colleagues in the Northern part of Germany he will support our customers in all kinds of industries in designing technically and economically reasonable protection solutions.



Our FAQ pages are meant to intensify the dialogue between manufacturer and customers. We discuss topical subjects from practice as briefly and yet as detailed as possible to support you in your daily work. Do you have any questions you need answer to? Send it to us - we are looking forward to hearing from you.

E-T-A Elektrotechnische Apparate GmbH

Keyword: [Current FAQ](#)

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Intelligent networking of devices - Is our protection smart yet?

Do protective devices have to be bus-capable?

Meanwhile there are more and more applications requiring “intelligent” components so as to allow data exchange with other linked devices. Keywords in the centre of interest are industry 4.0, smart-home, smart-cars as communication platforms, to mention only a few. Therefore, protective devices will in future have to be more and more capable of communication.

What is a bus?

In data technology, a bus is the electrical connection between several devices for the transmission of data. There are parallel and serial buses. Parallel system buses consist of a conductor bundle (e.g. 24 with IEEE-488) by means of which data words, addresses and control commands are transmitted in parallel. With serial buses, the data is transmitted in blocks consecutively via only two lines. This type of bus has become prevailing today in inter-device communication as it is cost-effective and fail-safe and is also able to transmit high data rates.

What is a protocol?

The protocol is the “language” which is talked on the BUS. It determines who can send what, when and to whom. Frequently used serial protocols include TCP/IP (internet), CIP, SNMP, Modbus TCP (IEC 61158) and J1939 (CAN-BUS).

What is a master slave system?

In a master-slave-system, a master device controls the entire data traffic in a network (e.g. Profinet). In a multimaster system, each control device can send and receive independently.

Which serial bus systems are available?

The most familiar serial bus is the USB interface which is mainly used for communication between computer periphery devices. In an industrial environment, field buses have been used for more than 20 years (PROFIBUS DP). The future, however, belongs to Ethernet based systems such as Profinet IO, Ethernet/IP, MOD-Bus-TCP to connect sensors, switching and protecting devices and control gear in a single data channel. In the meantime it has become possible to exchange process data in real time (RT) via fast-ethernet-technology. The Ethernet bus has established itself also in telecommunications and in data centres. Today the CAN bus, which is counted among the field buses, is widely used in

on-board electrical systems (automotive and marine industry).

What is an internal bus?

The internal BUS controls the data traffic between components and a control interface with external customer interface. In our **ControlPlex**® system we use an in-house development of the ELBus (E-T-A local bus) for this purpose.

What are our major applications?

In factory automation our electronic circuit protectors, such as ESX10-S, are controlled via the E-T-A **ControlPlex**® system. This system is also used in telecom applications and data centres. In the automotive industry the CAN bus is widely used. The E-T-A **PowerPlex**® system for watercraft, caravans and special vehicles also works with this technology.

| | |
|-----------------|---|
| TCP/IP | Transmission Control Protocol/Internet Protocol |
| CIP | Common Industrial Protocol |
| SNMP | Simple Network Management Protocol |
| Profinet | Process Field Network |
| CAN | Controller Area Network |



Use of our intelligent power distribution system SVS16 in a rolling mill.

A great combination Flexible specification replaces flexible development

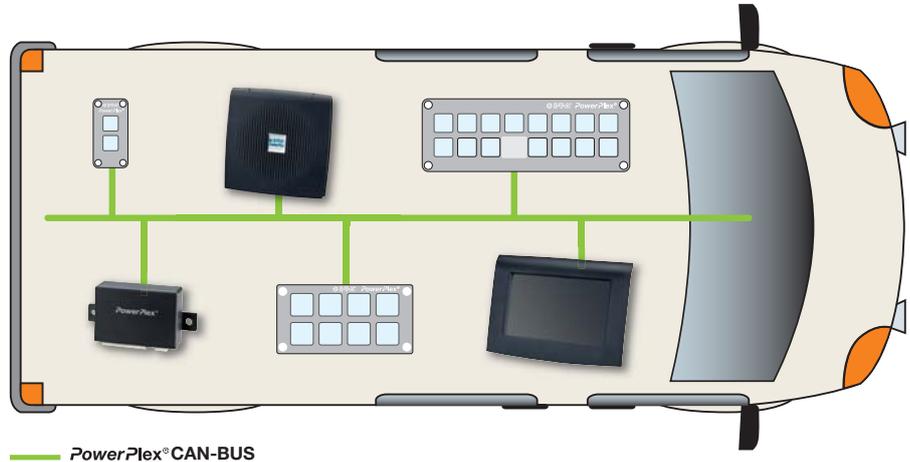
Central electrics vs. modular design



Andreas Haas,
Application Specialist
at E-T-A

The central electrics in a car is the central distribution box of control and supply lines. In most cases this distribution box is specially designed for each individual vehicle platform. The E-T-A protection concepts for on-board electrical

systems in special vehicles hold a wealth of configurations and make tailor-made individual system solutions out of our standard products.



The modular comprehensive concept of **PowerPlex®**, supplemented by special system technology solutions, features enhanced flexibility and room for system extensions.

In co-operation with our customers we produce conventional, pcb-based power distribution systems, e.g. by combining power relays and circuit breakers, similar to standard central electrics.

If additional **PowerPlex®** components are used, our customers benefit from a decentralised, configurable power distribution and control with electronic protection and from the advantages of the CAN bus technology. A **PowerPlex®** system controls and monitors status functions, operating status and command execution of the connected loads, switches and sensors.

The modular concept of **PowerPlex®** fulfills our customers' wishes regarding flexibility and enhancement of the on-board electrical system. Besides various **PowerPlex®** control modules we offer a range of **PowerPlex®**-specific control panels such as touch displays and keypads.

The configurability of the **PowerPlex®** components allow including various types with identical basic modules and - if need

be - extending the system with additional modules.

Upon request the basic modules can be supplied pre-wired on a mounting plate, similar to a central electrics system. Generally the customer will then install and configure the entire system on site.

Another advantage of the integration of **PowerPlex®** components is their capability

of remote maintenance. Remote access to the installed **PowerPlex®** system allows the service technicians to read out system information and to analyse the system condition without having to be on site at the vehicle.

PowerPlex® helps to offer our customers an increase of efficiency in all respects.



Example of an E-T-A power distribution system:
Combination of a pcb-based power distribution and protection by means of circuit breaker type 1620 and power relays, supplemented by a **PowerPlex®** Mini Module.

E-T-A solutions for many products

E-T-A offers tailor-made solutions for a wide range of industries and products. Here are some interesting examples.

Application: Examination and treatment chairs
E-T-A type: 3120-F7

Schmitz u. Söhne GmbH & Co. KG is a specialised manufacturer of medical equipment furniture for hospitals and private surgeries. For more than 80 years the medium-sized and family-run business, being meanwhile managed by the third and fourth generation, is one of the leading suppliers in this industry. Their comprehensive product range includes operating tables, special tables for patient transport as well as examination chairs for gynaecology, urology and proctology equipment for doctors' workplaces. Suitable general medical furniture completes their portfolio. In their examination and treatment chairs of the series medi-matic 115 Schmitz uses the E-T-A circuit breaker type 3120 with rocker actuation. It serves as the main ON/OFF switch for the chair and at the same time reliably protects it against overcurrents. In the event of a failure the E-T-A circuit breaker physically isolates the examination and treatment chair with double pole disconnection from the supply voltage so that damages caused by overheating are prevented from the start.



Application: Turboprop
E-T-A type: 4120

Pilatus, a Swiss company located in Stanz in Central Switzerland, is the only company there to design, build and sell aircraft to customers all over the world. For 75 years Pilatus has been building top-quality training airplanes and small multi-purpose aircraft. Their legendary PC-12 model is a bestselling single-engine turboprop throughout the world and with regard to safety and reliability they count on E-T-A. Some 130 pieces of our thermal aircraft circuit breaker

type 4120 are installed in each aircraft with ratings between 1 A and 25 A. The E-T-A circuit breakers reliably protect all circuits within the PC-12. Based on its capability to start and land even on extremely short airstrips, the PC-12 is also suitable for use in Australia. The famous Flying Doctors, for example, rely exclusively on this plane in the outback of Australia and thus of course also on E-T-A.



Applications

Application: Production, bottling and packaging machines

E-T-A type: ESS31-T

OPTIMA is a world market leader on the score of production, bottling and packaging machines. It was founded in 1922 in Schwäbisch Hall, Germany, by Otto Bühler. Today the privately owned company designs and produces a wide range of industry-oriented automation equipment. In their four business fields; pharma, consumer, nonwovens and life science, they employ more than 1,800 people world wide.

In the consumer business field their portfolio covers the whole range: It includes foodstuffs,



chemical products, cosmetic products, because OPTIMA systems can simply dose, bottle and package everything. For the best possible protection of the DC 24 V load circuits in their new bottling system for single-portion packs type CFL 2 - 8, OPTIMA uses our globally unique electronic circuit protector ESS31-T. This product ensures selective and reliable protection from 1.2 times rated current because of the combination of active current limitation and overload disconnection and additionally provides physical isolation.

Application: Fiber optic cable network

E-T-A type: 19"-rack

The huge German energy provider EnBW, located in the South of Germany, has concentrated their telecommunications activities in the NetCom BW. It is NetCom BW's goal to make the superfast internet available also for the „white areas on the map“ and therefore they installed latest-state-of-the-art transmission technology for the existing fiber optic network and protect it by using a 19" rack. The decisive detail about the circuit breakers was their plug-in design. It allows adding new circuit breakers at any time with the system running; a major aspect for future extensions. Today no telecom supplier can afford to switch off an operative star point or node to realize an extension. Thus NetCom BW is optimally prepared for the future.



E-T-A automotive circuit breakers in customer applications all over the world

Power distribution and management in vehicles remains a topical subject - both for the end customers and for the manufacturers. Our product solutions provide us with long-standing customer relationships all over the world with well-known manufacturers. They prefer E-T-A when it comes to protecting electrical loads or when they want to cut costs by precisely selected ratings in a system and thus avoid any inconveniences for the end customer.

Typical applications include the electrical protection of windscreen wipers, electrical window-lifters or seat adjustment. A failure in these functions considerably affects the roadworthiness and safety of a vehicle. Meanwhile our customers also protect 12 V power sockets in their cars because today these are no longer exclusively used as cigarette lighters. Today these power sockets are used by the drivers for a wide range of loads. In addition E-T-A products protect trailer illuminations (above all in humid conditions) and also the new adaptive headlights (adjusting to curves). In short: E-T-A protects all loads in a vehicle which require a special kind of protection.

Our customers appreciate the manifold benefits of our automotive circuit breakers, no matter whether it is 1160, 1610/1616, 1620/1626 or 1170/1776. Major advantages are resettability, precision and reliability. They help to reduce costs in the vehicle by an exact specification of loads, cable cross sections and power distribution. On the other hand, our circuit breakers help to reduce downtimes or failures and thus contribute to the brand management of the manufacturers.

Some car producers even advertise the use of circuit breakers as an additional feature which can be selected by the customer to enhance safety and quality.



The extremely compact thermal automotive circuit breaker types 1610 and 1620 as well as the powerful 1170 are used in application conditions where reliability and availability are of the essence. The types 1616, 1626 and 1176 are identical models, but offer a fast trip curve.

If a protective element has to be placed at a difficultly accessible spot, a blade fuse should not be used. These are typical applications for autoreset types 1610-92 and 1620-1. These will continue to reset in cycles of a few seconds until the failure has been remedied, i.e. until the overload has been removed. Types 1160 and 1620-2 offer a modified autoreset function where the contacts are kept open for a while until power in the circuit was switched off for a certain time.

Particularly for utility vehicles, type 1170 offers attractive features including snap-action mechanism, tease-free mechanism and a high rupture capacity of 400 A. The snap-action mechanism ensures switch-on operation without

hazardous arcs, while the tease-free mechanism allows reliable disconnection even with the reset button blocked. Its retaining clips provide a tight fit in the terminal block even in the event of shock and vibration.

The major benefits include:

- Enhanced reliability in professional surroundings
- No replacement fuses required due to resettability and reusability of the E-T-A products
- Reduced downtimes until re-start after tripping
- Clear color-coding of ratings and universal terminal design
- Reliable solutions both for DC12 V and DC 24 V, meeting the requirements of SAE J533

More information?
Just scan the
QR-Code!



Typical Chinese

»Chinese Hot Pot«

The Chinese Hot Pot is a very popular dish in China and all tourists in China love it. In addition it is an attractive alternative to the standard fish or cheese fondue, above all during the winter months.



Delivers a variety of savoural sensations: the Chinese »Hot Pot«

Directions

A large heated pot (e.g. a fondue pot) or a specific split pot bought in the Asia shop is the basic equipment for this cooking experience.

Put butter into Wok, heat and wait until the butter is really hot. Then add ginger, chili and the thick beans. Add the remaining ingredients for the soup. Keep boiling until the soup is slightly thickened. The soup for the Hot Pot is now ready.

Fill the soup into a separate pot. The normal stock is now heated in another pot or in the second half of the special pot. It mainly serves for neutralising the hot, spicy taste.

Mushrooms and vegetables should be cut into cubes that allow finding them in the pot, but that also allow cooking until they are done. Meat and fish should be cut into thin slices or small cubes. The rice noodles can be cooked beforehand and only be added to the pot for heating up.

For eating you can use fondue forks so that each participant keeps an eye on his own food or otherwise you put everything into one pot „without tenure“. The sensation in taste can easily be extended by adding sauces and dips or more ingredients to taste.

Enjoy!

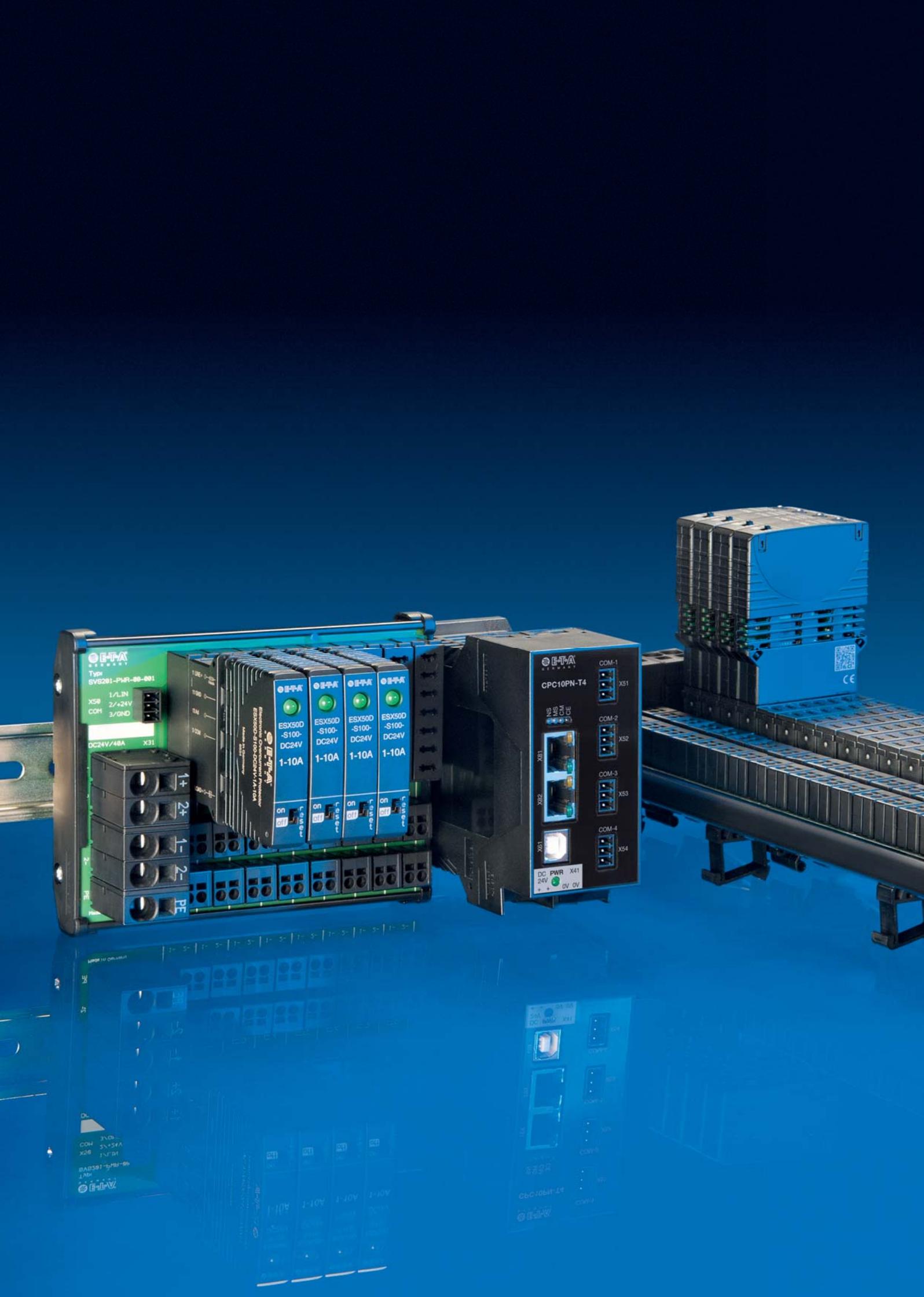
Ingredients for 4 - 6 servings

Soup:

- 1250 ml chicken-, beef or vegetable stock
- 250 g butter
- 125 g salted, thick-broad-bean sauce
- 50 g chopped ginger
- 75 g chopped chili
- 10 g black pepper
- 15 g salt
- 15 g sugar
- 30 ml rice wine
- 100 g juicy, sticky rice

Ingredients added to the soup:

- 400 g beef tenderloin, turkey breast and/or scampi
- 250 g various mushrooms
- 500 g vegetables (various sorts) suitable for cooking
- 750 g rice noodles (probably boil before and only add for heating up)



IFMA
RESEARCH

Type
SVS261-PWR-05-001

1/LIN
X58 2/+24V
COM 3/0V0

DC24V/48A X31

ESX50D-S100-DC24V 1-10A

ESX50D-S100-DC24V 1-10A

ESX50D-S100-DC24V 1-10A

ESX50D-S100-DC24V 1-10A

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CPC10PN-T4

COM-1 X51

COM-2 X52

COM-3 X53

COM-4 X54

DC PWR X41
24V 0V 0V

